

## CLAIMS

1. Cross-connect, including at least one switch matrix, said switch matrix including switching rows (131), switching columns (132), and relays (133), each relay (133) including  
5 at least a first pole (11, 21, 31, 81) connected to one of the switching columns (132) and at least a second pole (12, 22, 32, 82) connected to one of the switching rows (131), characterised in that at least some of the relays (133) are fuse-relays, which fuse-relays include said  
10 first pole (1, 11, 21, 31, 81) and at least said second pole (2, 12, 22, 32, 82), wherein the fuse-relays include each a resilient device (5, 18, 27, 37, 87) that is held in an elastically deformed position by a fuse (6, 16, 26, 36, 86) when the fuse (6, 16, 26, 36, 86) is whole; and in that the  
15 resilient device (5, 18, 27, 37, 87) is arranged to shift a connection between the first pole (1, 11, 21, 31, 81) and the second pole (2, 12, 22, 32, 82) between a closed and an open position when the fuse (6, 16, 26, 36, 86) is blown.
2. Fuse-relay, according to claim 1,  
20 characterised in that the fuse-relay further includes a third pole (13, 23, 33, 83) and a fourth pole (14, 24, 34, 84), in that the fuse (16, 26, 36, 86) is arranged to be blown when a sufficiently high current is sent between the third pole (13, 23, 33, 83) and the fourth  
25 pole (14, 24, 34, 84).
3. Fuse-relay according to claim 2, characterised in that the fuse-relay further includes a first metal blade (10) connected to the first pole (11) and a second metal blade (17) connected to the second pole (12); in that the  
30 resilient device includes a blade spring (18); in that the blade spring is arranged to be bent when the fuse (16) is whole; and in that the blade spring (18) is arranged to be released and, by pressing the second metal blade (17), shifting its contact with the first metal blade (10) to

shift contact between the first pole (11) and the second pole (12) between a closed and an open position when the fuse (16) is blown.

4. Fuse-relay according to claim 2, c h a r a c t e r i s e d  
5 in that the resilient device includes a coil spring (27,37) with a switch contact (28,38); in that the coil spring (27,37) is arranged to be in a tensioned position when the fuse (26) is whole; and in that the coil spring (27,37) is arranged to be released and, by pressing the switch contact  
10 (28,38), shifting its connection with the first pole (21) and the second pole (22) to shift contact between the first pole (21) and the second pole (22) between a closed and an open position when the fuse (26) is blown.

5. Fuse-relay according to claim 2, c h a r a c t e r i s e d  
15 in that the resilient device includes a torsion spring (87) and a switch contact (88); in that the torsion spring (87) is arranged to be twisted when the fuse (86) is whole; and in that the torsion spring (87) is arranged to be released and, by pressing the switch contact (88), shifting its  
20 connection with the first pole (81) and the second pole (82) to shift contact between the first pole (81) and the second pole (82) between a closed and an open position when the fuse (86) is blown.

6. Cross-connect, according to any of claims 1-5,  
25 c h a r a c t e r i s e d in that the cross-connect further includes addressing rows (121) and addressing columns (122); and in that said relays (133) further each includes a third pole (13, 23, 33, 83) connected to one of the addressing rows (121) and a fourth pole (14, 24, 34, 84) connected to  
30 one of the addressing columns (122).

7. Cross-connect, according to claim 6,  
c h a r a c t e r i s e d in that the cross-connect further includes a row multiplexor (125) connected to the addressing

rows (121) and a column multiplexor (127) connected to the addressing columns (122).

8. Cross-connect, according to any of the claims 1, 6 or 7, characterised in that the cross-connect further includes additional switching rows (141); in that at least some of the relays (133) are fuse-relays according to any of the claims 13 to 21; and in that said relays further each includes a fifth pole (42, 52, 62, 92) connected to one of the additional switching rows (141).
9. Cross-connect, according to any of the claims 1, 6, 7 or 8, characterised in that all of the switching rows (131) are not connected to all of the switching columns (132) via relays.

10. Cross-connect, according to any of the claims 1, 6-9, characterised in that an algorithm is provided for the selection of one of a group of second items (104) connected to the cross-connect for a selected first item (101) from a group of first items (101) connected to the cross-connect.

11. Cross-connect, according to claim 10, characterised in that said algorithm is arranged to select the second item (104) where the rest of the first items (101) able to connect to said second item (104), either already are connected to another second item (104), or have the highest possibility to be connected to another second item (104).

12. Cross-connect, according to claim 10 or 11, characterised in that the first items (101) are subscriber's terminals and the second items (104) are xDSL modems.

13. Cross-connect, according to any of the claims 10 to 12, characterised in that the cross-connect includes

a back (164) connected with at least one "page" (162) including the relays

14. Method for connecting one of several first items (101), to one of several second items (104),  
5 c h a r a c t e r i s e d in that the first items (101) and the second items (104) are connected to a cross-connect (105, 106, 107, 116, 117) including switching columns (132), switching rows (131), addressing columns (122), addressing rows (121) and fuse-relays; and by the following steps:
- 10 - selecting a second item (104) to which a selected first item (101) is to be connected,
- addressing an addressing column (122) and an addressing row (121) in the cross-connect (105, 106, 107, 116, 117),
- 15 - transmitting a sufficiently high current through said addressing row (121) and addressing column (122), thereby blowing a fuse (123) in one of the fuse-relays, thereby causing a connection to be made or broken between a switching row (131) and a switching column (132), thereby connecting the selected first item (101) with the selected
- 20 second item (102).

15. Method according to claim 14, c h a r a c t e r i s e d in that the cross-connect further includes additional switching rows (141); and by causing a connection to be made or broken between a switching row (121) and an additional
- 25 switching row (141) when the fuse (123) is blown.

16. Method according to claim 14 or 15, c h a r a c t e r i s e d by selecting the second item (104) where the rest of the first items (101) able to connect to said second item (104), either already are
- 30 connected to another second item (104), or have the highest possibility to be connected to another second item (104).

17. Method according to any of the claims 14 to 16,  
c h a r a c t e r i s e d in that the first items (101) are  
terminals and the second items (104) are xDSL modems.